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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** | | | | | | |
| **B.C.A - II SEMESTER** | | | | | | |
| **SEMESTER EXAMINATION: APRIL 2019** | | | | | | |
| **CA2318- Operating Systems** | | | | | | |
|  |  |  |  |  |  |
| **Time- 2 1/2 hrs** | |  | **Max Marks-70** | | |
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| **This paper contains two printed pages and three parts** | | | | | | |
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**SECTION A Answer all questions(2X10=20)**

1. What is purpose of system call?
2. Describe the function of dispatcher.
3. What are the disadvantages of batch processing system?
4. What is the use of a process control block?
5. Differentiate logical and physical address space.
6. What are the disadvantages of FCFS scheduling?
7. What type of fragmentation in there in case of paging and why?
8. Differentiate resource allocation graph and wait for graph.
9. What is deadlock avoidance ?
10. Describe different steps in case of page fault.

**SECTION B Answer any five questions (6X5=30)**

1. What is operating system? Explain different functions of operating system.
2. What is a process ? Discuss components of process and various states of a process with the help of a process state transition diagram.
3. Define semaphore. Explain how semaphores work. How can these be used to achieve mutual exclusion and condition synchronization.
4. Ex plain the different methods for handling deadlocks.
5. Explain the segmentation memory management scheme in detail.
6. What do you mean by paging?  How address mapping is performed in paging technique? Also enumerate the advantage and disadvantage of paging.
7. Why should there be a disk scheduling/ briefly describe and compare the FCFS and C-SCAN disk scheduling.

**SECTION C Answer any two questions(10X2=20)**

1. Explain different types of scheduling queues and types of schedulers.
2. Explain the different types of directory structure in operating system.
3. Consider the following page-reference string

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6

How many page faults would occur for the following replacement algorithms, assuming three frames? Remember all frames are initially empty

(a)LRU replacement (5)

(b) FIFO replacement (5)